

In the Claims:

Please amend the claims as follows:

1. (currently amended) A power supply system for an industrial robot, comprising:  
a transmitting part attached to the industrial robot and comprising an air cored including a first coil and a first converter for producing an alternating magnetic field from the first coil, the transmitting part further comprising a tunable resonance electric circuit; and  
a receiving part attached to a tool operatively connected to the robot comprising a second coil for providing an alternating current by induction from the alternating magnetic field and a second converter for producing from the alternating current a direct current for providing power to a tool carried by the robot, wherein the second coil is detachable from the first coil,  
wherein the transmission part is attached to the industrial robot, wherein the receiving  
part is attached to the tool, wherein the transmitting part comprises a tunable resonance electric  
circuit, and wherein the second coil is detachable from the first coil.
2. (previously amended) The power supply system according to claim 1, wherein the first coil and the second coil are arranged coaxially.
3. (previously amended) The power supply system according to claim 1, wherein the first coil and the second coil are arranged in parallel planes.
4. (currently amended) The power supply system according to claim 1, wherein the first

coil and the second coil ~~comprises~~ each comprise a ring-shaped form.

5. (currently amended) The power supply system according to claim 1, wherein the first coil and the second coil ~~comprises~~ each comprise a printed circuit board.

6. (previously amended) The power supply system according to claim 1, wherein the second coil comprises a core of magnetizable material.

7. (currently amended) The power supply system according to claim 1, wherein any of the first converter and the second converter comprises a control unit containing a microprocessor and memory ~~means~~.

8. (currently amended) A method for supplying power to a tool carried by an industrial robot, ~~wherein the method comprising:~~

attaching to the industrial robot an air cored first coil of a power system comprising the first coil and a first converter,

attaching to the tool a second coil detachable from the first coil,

providing a direct current ~~is provided~~ to a transmitting part of ~~a~~ the power supply system comprising a first coil and a first converter,

converting the direct current ~~is converted by~~ with the first converter and the first coil for producing an alternating magnetic field,

arranging a second coil of a receiving part of the power supply system ~~is arranged~~ to produce by induction an alternating current from the magnetic field, ~~and~~

converting the alternating current is converted into a direct current by a second converter of the receiving part of the power supply system, and the method comprising:

attaching the first coil to the industrial robot;

attaching the second coil to the tool and detachable from the first coil, and

arranging the first coil and the first converter in a resonance circuit, thereby increasing the current in the first coil thus producing an increased magnetic field.

9. (previously amended) The method according to claim 8, wherein the resonance circuit comprises an adjustable resonance circuit in order to account for variations in the impedance of the circuit due to incompleteness of the alignment of the first coil and second coil.

10. (currently amended) An industrial robot, comprising:

a power supply system according to claim 1 comprising a transmitting part attached to the industrial robot and comprising an air cored first coil and a first converter for producing an alternating magnetic field from the first coil, the transmitting part further comprising a tunable resonance electric circuit, and a receiving part attached to a tool operatively connected to the robot comprising a second coil for providing an alternating current by induction from the alternating magnetic field and a second converter for producing from the alternating current a direct current for providing power to a tool carried by the robot, wherein the second coil is detachable from the first coil.

11. (currently amended) A computer program product, comprising:

a computer readable medium; and

computer program instructions recorded on the computer readable medium and executable by for affect a processor to perform the a method according to claim 8 comprising providing a direct current to a transmitting part of a power supply system comprising a first coil and a first converter,

converting the direct current with the first converter and the first coil for producing an alternating magnetic field,

arranging a second coil of a receiving part of the power supply system to produce by induction an alternating current from the magnetic field, and

converting the alternating current into a direct current by a second converter of the receiving part of the power supply system.

12. (currently amended) The computer program product according to claim 11, wherein the computer program instructions are provided at least in part over a network such as the Internet.

13. (currently amended) The computer A computer readable medium containing a computer program product according to claim 11 12, wherein the network is the internet.